Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	MB Docket No. 05-312
Digital Television Distributed	)	
Transmission System Technologies	)	

Comments of
Cohen, Dippell and Everist, P.C.

The following comments are respectfully submitted by the consulting engineering firm of Cohen, Dippell and Everist, P.C. ("CDE") concerning MB Docket No. 05-312 and the "Clarification Order and Notice of Proposed Rulemaking", FCC 05-192, released November 4, 2005 [CO & NPRM]. CDE or its predecessors have been providing consulting engineering services to the broadcast industry for over 60 years.

If the FCC's OET 69 interference methodology is sound, then restricting DTS coverage to the "single-stick potential" rather than interference-based limits, only reduces the total potential audience that can be served by all stations. If the FCC is overly concerned about DTS being used by stations to "hop scotch" across DMA's, then a simple restriction could be instituted such as: "the majority of the population served by the total DTS service must not exceed the population within the specified distances [table in ¶21 of the CO & NPRM] of the designated primary transmitter site or hypothetical single transmitter site". Not requiring "new" TV services to protect the population outside of these distances alleviates the FCC's concern about limiting new local services [as described in ¶18]. The same distances could be used to establish incumbent broadcaster protected contours for other services such as wireless services licensed under Part 27. Also, the FCC's

concern about violating "exclusive territories based on contractual arrangements" expressed in ¶18 is misguided; the FCC must seek to maximize service, the industry will need to address any contractual conflicts that result from maximized service.

In ¶21, the FCC requested comments for what should be used as the reference point for the proposed distances. Rather than an arbitrary historical site, the reference point should be the designated actual "primary transmitter" site or any specified theoretical primary site provided that a theoretical maximum facility at that site would cover the community of license with the appropriate 35, 43 or 48 dBu F(50,90) field strength.

The concerns expressed by the Commission in ¶'s 24 and 25 are both contradictory and ill-founded. "Significantly expanded areas of service" are a benefit, not a problem, as long as they do not impinge on existing or new services. Furthermore, the concern over "cherry-picking" by a broadcaster employing DTS is predicated on an "incentive" to reduce service that is greater than the "incentive" for a "single-stick" broadcaster. Existing rules for serving certified populations are more than sufficient to prevent reduction in service.

We concur that current height/power rules are sufficient and that all sites/transmitters/ antennas in the system should be licensed as a whole.

It is also important to consider the DTS as a whole for calculating interference caused. In order to conservatively estimate co-channel interference, the undesired field strength contribution of each individual transmitter in the DTS should be simply summed to each desired cell and the appropriate D/U ratio applied. This conservative approach effectively addresses the concern of diminishing neighboring services. For first-adjacent interference, there is virtually no possibility that the receiver will coherently sum interfering signals from two undesired transmitters; summing

the undesired signals would be overly pessimistic. Therefore, the root-sum-square "RSS" method of summing the individual undesired contributions to each cell should be used for first-adjacent DTV to DTV interference.

In terms of protecting DTS service areas, only the strongest desired field strength should be considered. Although receivers can combine multiple desired signals (DTS and multipath) with increasing effectiveness, a conservative approach should be used, especially where the desired DTS service will be protected only within the distances described above and only where at least one desired signal, in and of itself, is above the noise-limited field strength.

Modification to the OET 69 methodology and application processing software will be required. This opportunity should be used to incorporate other improvements. The current software defines a unique grid of cells based on the specific transmitter site being evaluated. The only minor advantage of this method is that the transmitter being evaluated is at the center of a cell and that all cells are the same size. Evaluation of multiple transmitters requires a common grid [congruent cells]. A logical solution is to align the grid on cardinal values of latitude and longitude [NAD-83]. This would have the added benefit that stored intermediate results [desired or undesired field strengths, population, area, land cover, etc.] of any analysis to a given congruent cell would be readily comparable to those from another study. While the cell size of each cell would vary slightly over a given station's study area, the computer program could easily keep track of this. Counting of population centroids would be greatly simplified.

In the center of the continental United States ["CONUS"] a cell 1 minute by 1 minute is approximately 1.85 km [north-south] by 1.45 km [east-west], or 2.68 sq. km. Over the entire CONUS, this cell size would vary from 3.12 to 2.27 sq. km. This cell size is a logical replacement

for the current standard 2 km x 2 km cell size which is an even (but arbitrary) 4 sq. km. Also, in the CONUS, 30 sec. x 30 sec. cells would range in size from 0.57 to 0.78 sq. km, which is smaller that the standard 1 sq. km cell for LPTV evaluation, but easily managed. Given the current speed and storage capacity of even inexpensive computers, cell dimensions of 20, 15 or 10 sec. would be feasible, although not necessarily recommended.

The modified OET 69 methodology application processing software would benefit greatly from revised DTV to DTV D/U ratios that:

- are based upon tests of newer receivers
- consider the cumulative effect of multiple undesired signals
- adjust for absolute desired signal strength

The above comments are intended for DTS implementation in a post-transition environment. The use of simpler, more conservative standards in order to facilitate the transition would be understandable. In the long run, however, unduly restricting an option for improving service should be avoided.

Respectfully submitted,

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February 6, 2006